



# STUDENT JOURNAL

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**How do inclined planes work to change the amount of force required to move an object?**

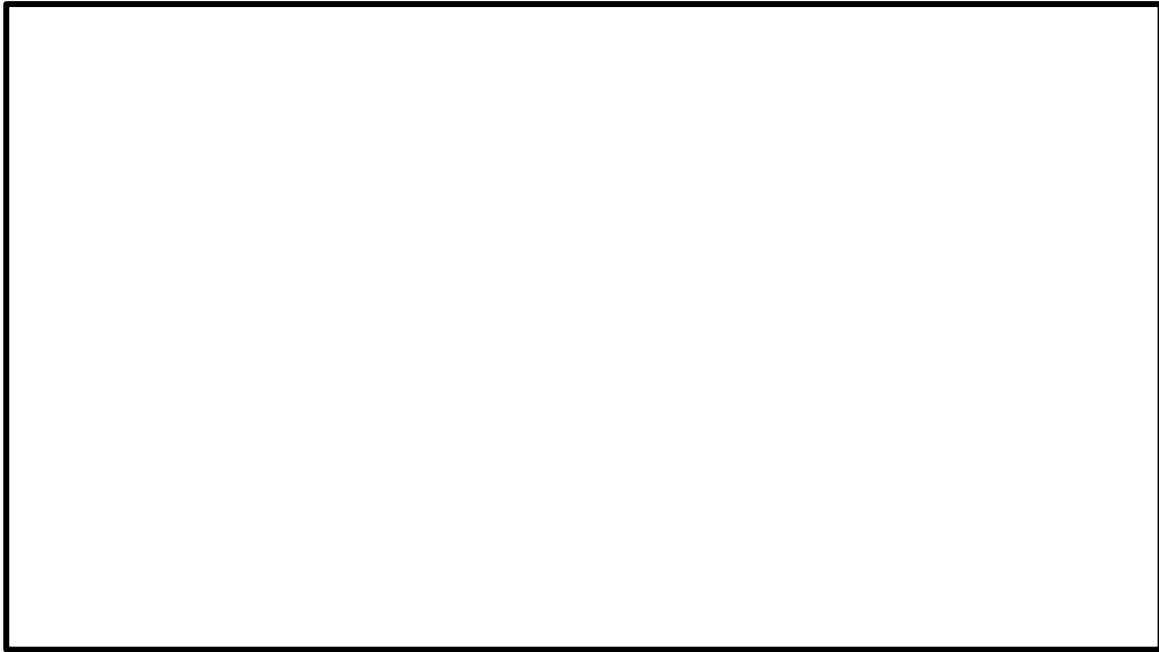
## Part I: Using an Inclined Plane

Weight of the Marble Load (Newtons)	Force Required To Lift Marble Load <i>Directly</i> From the Surface of Table (Newtons)
Number of Books (Height of Inclined Plane)	Force Required To Lift Marble Load From Surface To Top of the Inclined Plane (Newtons)

## How do inclined planes work to change the amount of force required to move an object?

### Part I: Using an Inclined Plane

1. Draw a diagram of the inclined planes that you constructed.



2. How did the inclined plane affect the amount of force needed to move the load?

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3. Did you find a relationship between the height of the inclined plane and the force required to lift the load? Explain your answer.

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**How do pulley systems work to reduce the amount of force required to lift a load?**

## Part II: Using a Simple Pulley

<b>Initial Load Weight (Newtons)</b>

Type of Pulley	Load Weight (Newtons)	Force Required to Lift the Load Using the Pulley (Newtons)

## How do pulley systems work to reduce the amount of force required to lift a load?

### Part II: Using a Simple Pulley

1. In the space below, draw and label a diagram of each pulley system you assembled and used in the activity.



2. How did the pulleys reduce the amount of force needed to lift the load?

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3. What happened to the force required to lift the load as more pulleys were added to the system?

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## Reflections and Conclusions

1. How do inclined planes and pulleys change the amount of force needed to move an object?

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2. How do pulleys differ from inclined planes?

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3. Is there a connection between the distance the load travels and the change in force required to move a load when using an inclined plane or a pulley? How could you test this question?

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